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Employment

In 2000, establishments in the City of Falls Church employed approximately 9,400 people.

The City of Falls Church has one of the most highly skilled and educated work forces in the nation. Over half of all those employed are college educated, one-quarter have an advanced degree, and most are in professional, managerial, clerical and skilled craft positions. The major businesses in the City consist of service (including defense and information technology), government, construction, trade, financial, and information firms. Figure 2-6 shows a breakdown of employment in the City of Falls Church by industry.

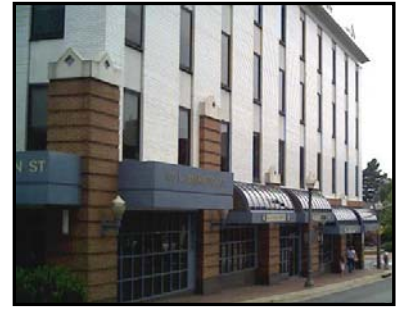
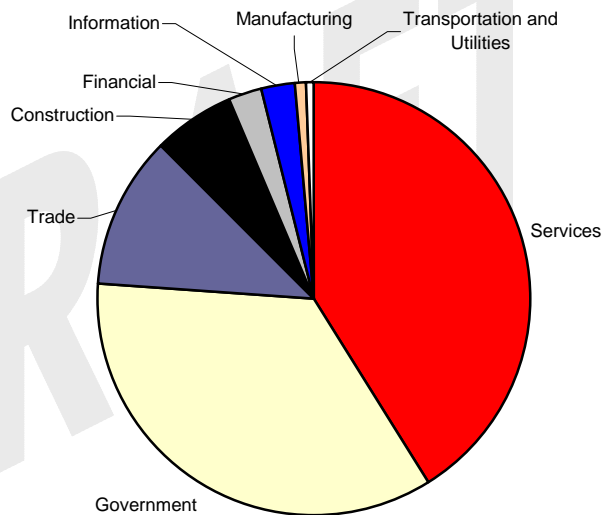


Figure 2-6. Employment in the City of Falls Church by Industry



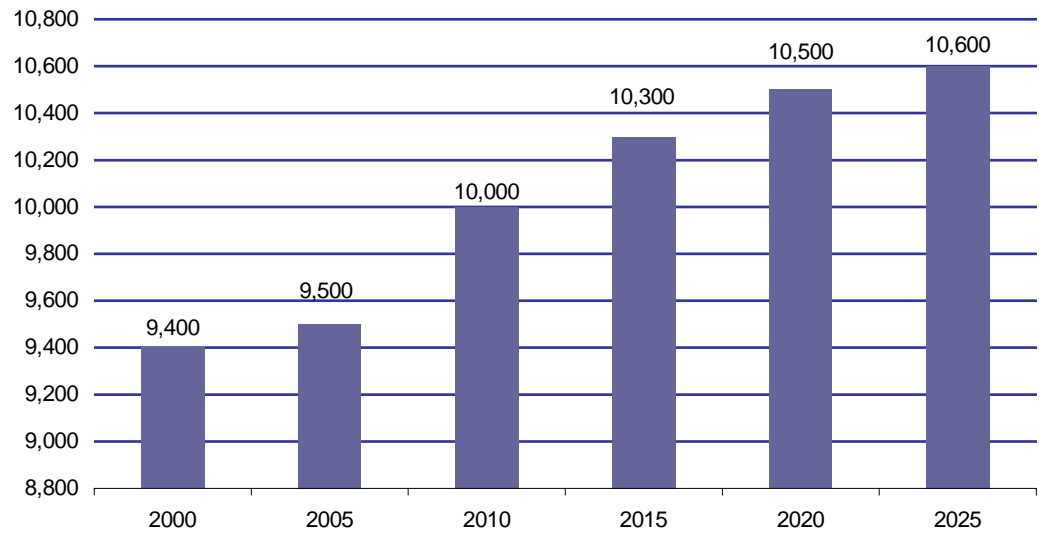
Source: Virginia Economic Development Partnership, 2003.

Since the City predicts population growth to outpace employment growth, commercial waste will likely decrease as a percentage of the total waste stream.

Employment Forecasts

The City of Falls Church expects employment to grow by roughly 13 percent between 2000 and 2025. Therefore, employment growth is predicted to be less than the growth of population in the City (17 percent) over the same period. As a result, the City of Falls Church will likely experience a decrease in commercial waste as a percentage of the total MSW stream over the next 20 years. Figure 2-7 shows the employment projections for the City of Falls Church from 2000 to 2025.

Figure 2-7. City of Falls Church Employment Projections, 2000–2005



Source: City of Falls Church, Planning Division, 2003.

Composition of Solid Waste

MSW

Waste Generation Activities

Municipal solid waste (MSW) includes trash produced by households, apartment buildings, hotels, motels, businesses, industry and institutions.

Municipal solid waste (MSW) includes solid waste generated by residential, commercial, industrial, and institutional establishments. This includes trash produced by households, apartment buildings, hotels and motels, and businesses, including offices, stores, and restaurants, and institutions such as schools and hospitals. Fairfax County, which accepts and maintains data on City of Falls Church MSW, does not track waste receipts based on residential, commercial, industrial, or institutional origin; therefore, the City used data representing the combined MSW stream to develop the future projections in this section. The MSW totals *include* yard wastes and certain special wastes described further in this chapter, such as used oil, antifreeze, tires, batteries, and household hazardous waste (HHW).

Waste Stream Material Types

The plastic component of the MSW stream in the U.S. has been increasing, and the paper component has been decreasing over the last five years.

The City of Falls Church does not collect waste characterization data; the best estimates of City MSW stream composition are the recent national solid waste composition data in the U.S. Environmental Protection Agency (EPA) biennial survey report *Municipal Solid Waste in the United States: 2000 Facts and Figures*. (Table 2-2 includes the waste composition characterization from this study.)

Table 2-2 also presents the 1995 EPA data to illustrate the changing composition of MSW. The MSW stream's plastic component has been

increasing over the last five years (10.7 compared with 8.9 percent), while the paper component has been decreasing (37.4 compared with 38.6 percent).

Table 2-2. City of Falls Church Estimated Waste Stream Composition (%)

| Category | 2000 USEPA mean | 1995 USEPA mean |
|------------------|-----------------|-----------------|
| Paper | 37.4 | 38.6 |
| Plastic | 10.7 | 8.9 |
| Yard Waste | 12.0 | 14.0 |
| Organics | 23.4 | 21.6 |
| Glass | 5.5 | 6.1 |
| Aluminum | 1.4 | 1.4 |
| Ferrous Metals | 5.8 | 5.5 |
| Misc. Inorganics | 1.5 | 1.5 |
| Other Waste | 1.7 | 1.7 |

Source: USEPA, 2002

Paper and organics (lumber, textiles, diapers, food waste, etc.) represent the largest components of MSW.

Residential and Commercial Waste Percentages

The City estimates that currently residential sources generate 56 percent and commercial sources (businesses, institutions, and industries) generate 44 percent of the waste stream.

Based on City of Falls Church waste generation data, 56 percent of the MSW stream is generated by residential sources and 44 percent is generated by commercial sources, including businesses, institutions and industries. Wastes generated by these sources have similar components:

| | |
|--|---|
| Residential. Single- and multi-family homes. | Newspapers, clothing, disposable tableware, food packaging, cans and bottles, food scraps, and yard trimmings |
| Commercial. Office buildings, retail and wholesale establishments, and restaurants. | Corrugated boxes, food wastes, office papers, disposable tableware, paper napkins, yard trimmings |
| Institutional. Schools, libraries, hospitals, prisons. | Cafeteria and restroom trashcan wastes, office papers, classroom wastes, and yard trimmings |
| Industrial. Packaging and administrative (not process wastes). | Corrugated boxes, plastic film, wood pallets, lunchroom wastes, and office papers |

These statistics correlate well with national waste percentages; for example, the national EPA survey estimates that in 2000, the breakdown of MSW generation was 55 to 65 percent from residential sources and 35 to 45 percent from commercial.

Waste Generation Rates

The average City MSW generation rate over the last three years is 7.10 pounds per capita per day.

The City compiled data from Fairfax County scale records and recycling reports for 2000, 2001, and 2002 to determine the City MSW per capita generation rate for each year (see Table 2-3). The City calculated the total waste generation by adding the City waste disposed and recycling totals for each year. The average City waste generation over the last three years is 7.10 pounds per capita per day (pcd).

Table 2-3. Recent City of Falls Church MSW Generation Rate Data

| Year | Waste Disposal (tons) | Recycling (tons) | Total Generation (tons) | Population | MSW Generation Rate (pcd) |
|----------------|-----------------------|------------------|-------------------------|------------|---------------------------|
| 2000 | N/A | 10,754 | N/A | 10,377 | N/A |
| 2001 | 6,254 | 7,152 | 13,406 | 10,422 | 7.05 |
| 2002 | 6,769 | 6,905 | 13,674 | 10,466 | 7.16 |
| Average | | | | | 7.10 |

N/A - Data not available

Formulas:

$Waste\ Disposal\ (tons/yr) + Recycling\ (tons/yr) = Total\ Waste\ Generation\ (tons/yr)$

$Waste\ Generation\ (pounds)\ Per\ Capita\ Per\ Day\ (pcd) = Total\ Waste\ Generation\ (tons/yr) \times 2000\ pounds/ton \times 365\ days/yr\ divided\ by\ Population$

Recycling data

In recent years, the City MSW recycling rate has ranged from 46.7 to 53.4 percent.



The annual City recycling reports calculate total recycling tonnage for each calendar year. Table 2-4 summarizes City recycling totals for 1999 through 2002. Recycling data include residential and commercial recyclables, yard waste, and special waste recyclables.

Table 2-4. City of Falls Church Recycling Data (tons)

| Material | 1999 | 2000 | 2001 | 2002 |
|--------------------------------|---------------|----------------------|---------------|---------------|
| Paper | 2,634 | 4,271 | 2,663 | 2,413 |
| Metal | 814 | 1,545 | 1,159 | 1,153 |
| Plastic | 48 | 79 | 38 | 39 |
| Glass | 258 | 537 | 140 | 160 |
| Commingled bottles and cans | 0 | 66 | 157 | 209 |
| Yard waste | 2,577 | 3,993 | 2,718 | 2,621 |
| Wood | 533 | 20 | 6 | 15 |
| Textiles | 34 | 21 | 52 | 36 |
| Waste tires | 73 | 67 | 60 | 117 |
| Used oil | 112 | 117 | 118 | 94 |
| Used oil filters | 0 | 0 | 2 | 3 |
| Used antifreeze | 0 | 0 | 14 | 11 |
| Batteries | 0 | 9 | 15 | 15 |
| Electronics | 0 | 13 | 15 | 20 |
| Chemicals and solvents | 11 | 15 | 1 | 1 |
| Total material recycled | 7,100 | 10,754 | 7,152 | 6,905 |
| Waste disposed | 8,111 | Not Available | 6,254 | 6,769 |
| Total waste stream | 15,211 | Not Available | 13,406 | 13,674 |
| City recycling rate | 46.7% | Not Available | 53.4% | 50.5% |

CDD

Waste Generation Activities

Construction/Demolition/Debris (CDD) constitutes a major portion of the City's solid waste stream. As defined by the Virginia Solid Waste Management Regulations, CDD includes the following:

- *Construction waste.* Solid waste produced or generated during construction, remodeling, or repair of pavements, houses, commercial buildings, and other structures. Construction wastes include lumber, wire, sheetrock, broken brick, shingles, glass, pipes, concrete, paving materials, and metal and plastics if the metal or plastics are part of the materials of construction or empty containers for such materials. Paints, coatings, solvents, asbestos, any liquid, compressed gases or semi-liquids, and garbage are not construction wastes.



**Construction/
Demolition/Debris
(CDD) includes waste
generated during
(1) construction,
remodeling, or repair
of buildings or
pavements,
(2) destruction of
structures and their
foundations, and
(3) land clearing
operations.**

- *Demolition waste.* Solid waste produced by the destruction of structures and their foundations, which includes the same materials as construction wastes.
- *Debris waste.* Wastes resulting from land clearing operations. Debris wastes include stumps, wood, brush, soil, and road spoils.

Since no data are available for City of Falls Church CDD generation, the City used Fairfax County generation rate estimates.

Waste Generation Rates

No data are available for CDD generation in the City of Falls Church; the City used Fairfax County generation rate estimates for these wastes.

CDD generated in Fairfax County is primarily disposed of at three facilities in the county: Hilltop Sand and Gravel Company Debris Landfill (Alexandria), Lorton CDD Landfill (Lorton), and Rainwater Concrete Company Landfill (Lorton). In addition, three facilities in neighboring counties receive CDD generated in Fairfax County: Potomac Landfill (Dumfries), WMI (Manassas), and Corral Farm (Warrenton). Each of these facilities provided data on annual quantities of waste received and the estimated percentage attributable to Fairfax County. Table 2-5 shows the data submitted by the facilities. (Note that CDD is not weighed at these facilities; tonnage is estimated based on volumes.)

Table 2-5. CDD Facility Estimated Waste Receipts for Fairfax County (tons)

| Facility | | 1998 | 1999 | 2000 | 2001 | 2002 | Average |
|----------------------------|---------|----------------|----------------|------------------|------------------|------------------|----------------|
| Hilltop Debris LF | Total | 350,000 | 300,000 | 250,000 | 200,000 | 200,000 | 260,000 |
| | Fairfax | 297,500 | 255,000 | 212,500 | 170,000 | 170,000 | 221,000 |
| Lorton CDD LF | Total | 868,000 | 955,000 | 1,050,000 | 1,155,000 | 1,040,000 | 1,013,600 |
| | Fairfax | 325,000 | 358,000 | 394,000 | 433,000 | 390,000 | 380,000 |
| Rainwater Conc. Co. LF | Total | 32,000 | 35,000 | 51,000 | 43,000 | 44,000 | 41,000 |
| | Fairfax | 24,000 | 25,000 | 41,000 | 33,000 | 30,000 | 30,600 |
| Potomac LF | Total | — | — | — | — | — | — |
| | Fairfax | 10,000 | 19,000 | 28,000 | 38,000 | 47,000 | 28,400 |
| WMI Manassas TS | Total | 33,000 | 33,000 | 33,000 | 33,000 | 33,000 | 33,000 |
| | Fairfax | 11,000 | 11,000 | 11,000 | 11,000 | 11,000 | 11,000 |
| Corral Farm LF | Total | 165,000 | 165,000 | 165,000 | 165,000 | 165,000 | 165,000 |
| | Fairfax | 83,000 | 83,000 | 83,000 | 83,000 | 83,000 | 83,000 |
| Total Fairfax CDD | | 750,000 | 751,000 | 769,000 | 767,000 | 730,000 | 753,400 |
| Fairfax Population | | 962,910 | 978,038 | 1,001,624 | 1,016,406 | 1,032,205 | 998,237 |
| CDD gen. rate (pcd) | | 4.27 | 4.21 | 4.21 | 4.13 | 3.88 | 4.14 |